

## 2006 ACCESSORIES & EQUIPMENT

### Navigation Systems - Lucerne

## SPECIFICATIONS

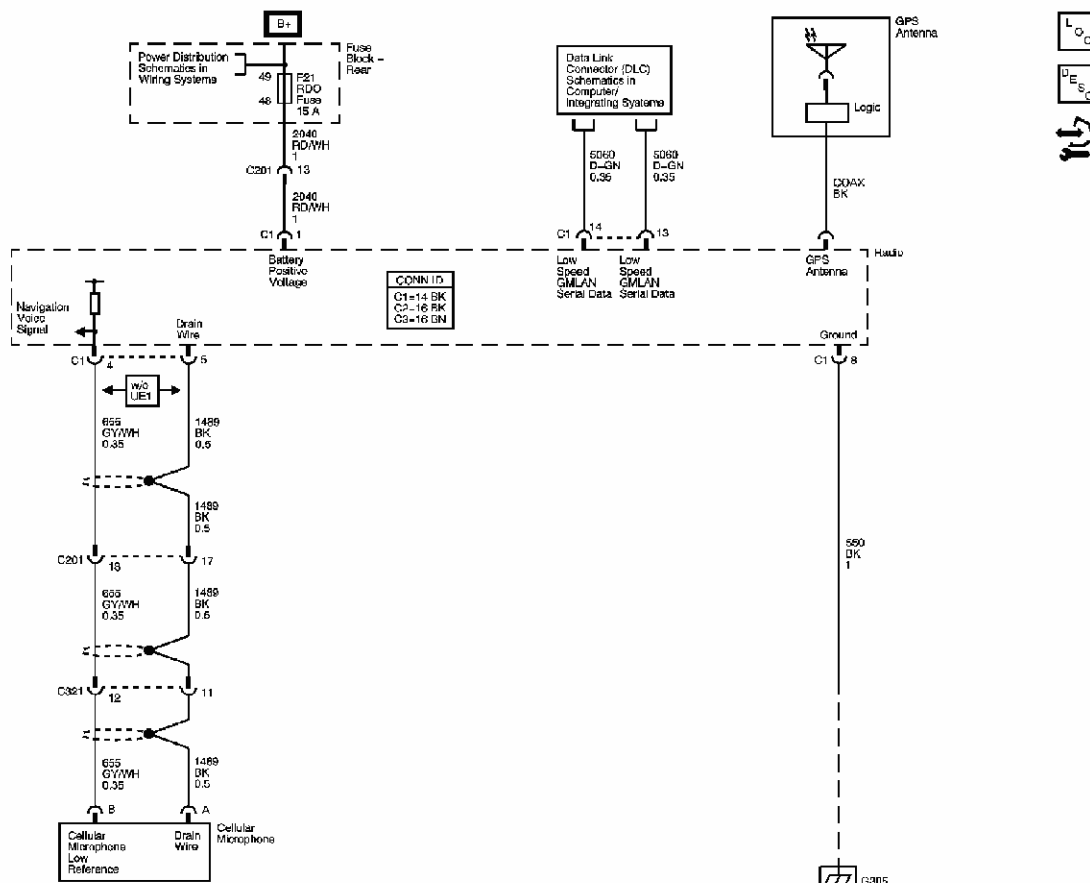
### FASTENER TIGHTENING SPECIFICATIONS

#### Fastener Tightening Specifications

Application	Specification	
	Metric	English
TV Antenna Amplifier Fasteners	9 N.m	80 lb in
TV Antenna Module Fasteners	9 N.m	80 lb in

## SCHEMATIC AND ROUTING DIAGRAMS

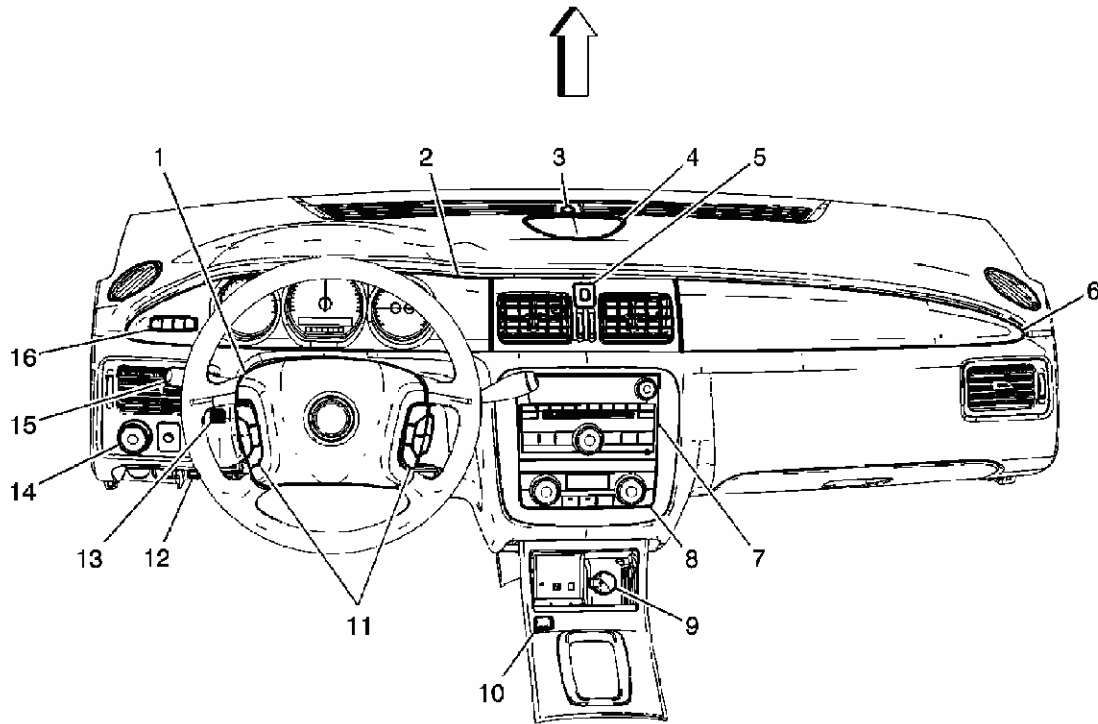
### NAVIGATION SYSTEM SCHEMATICS



**Fig. 1: Navigation System Schematic - Without UE1**  
**Courtesy of GENERAL MOTORS CORP.**

## COMPONENT LOCATOR

### NAVIGATION SYSTEM COMPONENT VIEWS



**Fig. 2: Locating Instrument Panel (I/P) Components**  
 Courtesy of **GENERAL MOTORS CORP.**

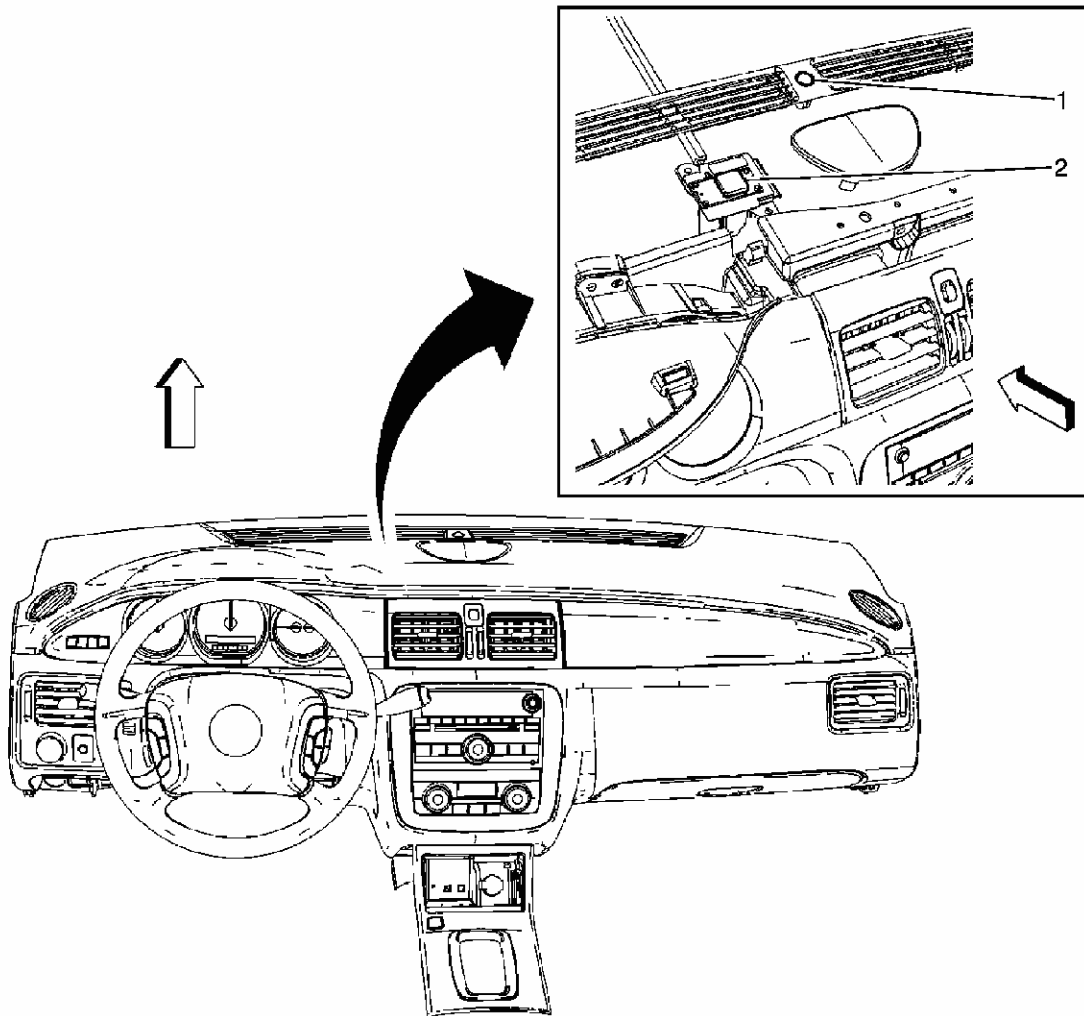
#### Callouts For Fig. 2

Callout	Component Name
1	Inflatable Restraint Steering Wheel Module
2	Instrument Panel Cluster (IPC)
3	Sunload Twilight Sensor
4	Speaker - Front Center (UQA)
5	Hazard Switch
6	Inflatable Restraint I/P Module
7	Radio
8	HVAC Control Module
9	Auxiliary Power Outlet - Console (A51)/Cigar Lighter (DT4 w/A51)
10	Traction Control Switch
11	Steering Wheel Controls
12	Data Link Connector (DLC)
13	Air Temperature Sensor - Inside (CJ2)

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14	Headlamp Switch Outlet - Console (A51)/Cigar Lighter (DT4 w/A51)
15	Tune Signal/Multi Switch
16	Steering Wheel Control Display Switch



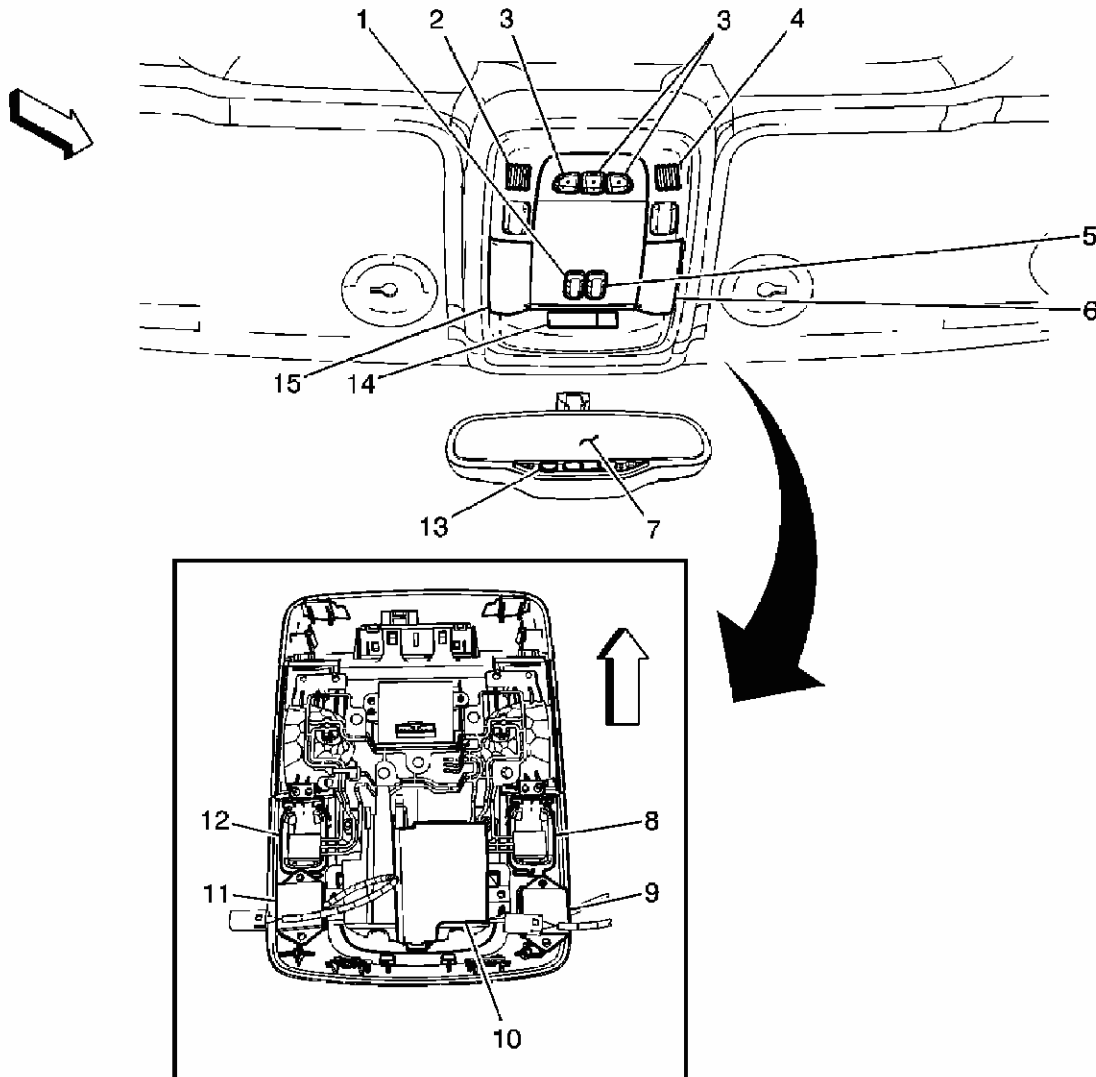
**Fig. 3: View Underneath Center Dash Panel**  
Courtesy of GENERAL MOTORS CORP.

### Callouts For Fig. 3

Callout	Component Name
1	Sunload Twilight Sensor
2	Global Positioning System (GPS) Antenna (U3U)

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**Fig. 4: Identifying Overhead Console & Inside Rearview Mirror Components**  
Courtesy of GENERAL MOTORS CORP.

### Callouts For Fig. 4

Callout	Component Name
1	Sunroof Switch - Open/Close (CF5)
2	Cellular Microphone (UE1, U3U)
3	Garage Door Opener Buttons (UG1)
4	Cellular Microphone (UE1, U3U)
5	Sunroof Switch - Vent (CF5)
6	Courtesy Lamp - Overhead Console - Right
7	Inside Rearview Mirror
8	Courtesy Lamp Switch - Right
9	Cellular Microphone (UE1, U3U)

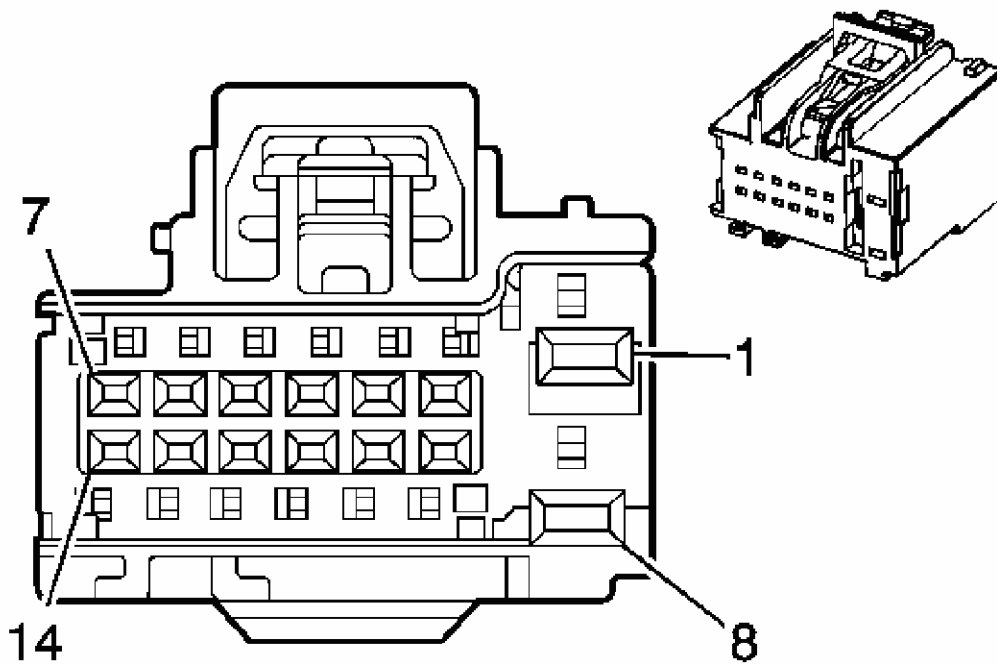
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13	Garage Door Opener Buttons (FIGUG1)
14	Cellular Microphone ((UE11, UE3U))
12	Courtesy Switch (Left)
16	Costate Button Assembly - Right
17	Inside Restrain M/R Module Indicator
18	Courtesy Lamp Switch - Right

### NAVIGATION SYSTEM CONNECTOR END VIEWS

#### Radio C1



**Fig. 5: Radio C1 Connector End View**  
Courtesy of GENERAL MOTORS CORP.

### Navigation System Connector End Views

#### Connector Part Information

- OEM: 7283-4490-30
- Service: See Catalog
- Description: 14-Way F (BK)

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### Terminal Part Information

- OEM 15283-4490-30
- Service Tray Catalog 1812/19
- Description 4-Wire F (BK)
- Release Tool/Test Probe: 15315247/J-35616-2A (GY)
- Pins: 2, 3, 4, 4, 5, 5, 6, 7, 9, 10, 11, 13, 14
- Terminal/Tray: 7116-4618-02/14
- Core/Insulation Crimp: P/P
- Release Tool/Test Probe: J-38125-215/J-35616-64B (L-BU)

### Radio C1

Pin	Wire Color	Circuit No.	Function
1	RD/WH	2040	Battery Positive Voltage
2	TN	511	Left Front Low Level Audio Signal
3	L-GN/WH	512	Right Front Low Level Audio Signal
4	GY/WH	655	Navigation Voice Signal (w/o UE1)
4	GY/BK	7043	Voice Recognition Audio Signal (U3U)
5	BK	1489	Drain Wire (w/o UE1)
5	PK/BK	7044	Voice Recognition Audio Low Reference (U3U)
6	PK	5165	Antenna 14-Volt Switched Supply Voltage
7	YE	1491	Backlight Lamp Control
8	BK	550	Ground
9	D-GN/RD	1947	Left Front Low Level Audio (-)
10	L-GN	1948	Right Front Low Level Audio (-)
11	BK	1573	Front Audio Drain Wire
12	-	-	Not Used
13	D-GN	5060	Low Speed GMLAN Serial Data
14	D-GN	5060	Low Speed GMLAN Serial Data

## DIAGNOSTIC INFORMATION AND PROCEDURES

### DIAGNOSTIC STARTING POINT - NAVIGATION SYSTEM

Begin the system diagnosis with the **Diagnostic System Check - Vehicle** in Vehicle DTC

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Information. The Diagnostic System Check - Vehicle will provide the following information:

- The identification of the control modules which command the system.
- The ability of the control modules to communicate through the serial data circuit.
- The identification of any stored DTCs and their status.

The use of the Diagnostic System Check - Vehicle will identify the correct procedure for diagnosing the system and where the procedure is located.

**SCAN TOOL DATA LIST****Radio**

<b>Scan Tool Parameter</b>	<b>Data List</b>	<b>Units Displayed</b>	<b>Typical Data Value</b>
<b>Operating Conditions: Ignition ON/Engine OFF/Radio ON</b>			
End Model Part Number	Module Information	Numeric	Varies
Base Model Part Number	Module Information	Numeric	Varies
Julian Date of Build	Module Information	Numeric	Varies
Software Part Number	Module Information	Numeric	Varies
Year Module Built	Module Information	Numeric	Varies
Component Serial No. 13-16	Module Information	Numeric	Varies
CD S.W. Level	CD/DVD/Map Information	-	-
CD H.W. Level	CD/DVD/Map Information	-	-
DVD H/W Part Number	CD/DVD/Map Information	Numeric	-
DVD S/W Part Number	CD/DVD/Map Information	Numeric	-
Navigation Software Version	CD/DVD/Map Information	-	-
Navigation Hardware Level	CD/DVD/Map Information	-	-
Antenna Module	Data	Enabled/Disabled	Enabled
Auxiliary Video Input	Data	Present/Not Present	Varies

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Scan Tool Parameter	Data List	Units Displayed	Typical Data Value
Battery Voltage Signal	Data	Numeric	Varies
Ignition Counter	Data	Present/Not Present	Varies
Power Mode	Data	Off/Accessory/Run/Crank	Run
Base Model Part Number	Module Information	Numeric	Varies
Power Mode Config.	Module Information	Request	Varies
Signal Strength	Data	Bench/Normal Mode	Normal
Julian Date of Build	Module Information	Numeric	Varies
Theft Armed	Data	No VIN/Learned VIN	Learned VIN
Software Part Number	Module Information	Active/Inactive	Inactive
Video Display	Data	Present/Not Present	Varies

### Digital Radio Receiver

Scan Tool Parameter	Data List	Units Displayed	Typical Data Value
<b>Operating Conditions: Ignition ON/Engine OFF/Radio ON</b>			
Battery Voltage	Data	Volts	Varies
Ignition Counter	Data	Numeric	Varies
Power Mode	Data	Alphanumeric	Run

### Amplifier (Bose)

Scan Tool Parameter	Data List	Units Displayed	Typical Data Value
<b>Operating Conditions: Ignition ON/Engine OFF/Radio ON</b>			
End Model Part Number	Module Information	Numeric	Varies
Base Model Part Number	Module Information	Numeric	Varies
Software Part Number	Module Information	Numeric	Varies
Year Module Built	Module Information	Numeric	Varies
Julian Date of Build	Module Information	Numeric	Varies
Component Serial No. 13-16	Module Information	Numeric	Varies
Battery Voltage	Data	Volts	Varies
Calculated System Temperature	Data	Celsius	30



**SCAN TOOL DATA DEFINITIONS****Base Model Part Number**

Information used during SPS programming to identify a unique combination of ECU hardware and all non-reprogrammable software (e.g. Boot software).

**Battery Voltage Signal**

The scan tool displays 0-25.5 volts. The displayed value is calculated from a circuit connected to source voltage.

**CD H/W Level**

The scan tool displays a numeric value that represents the hardware level the internal CD Changer contains.

**CD S/W Level**

The scan tool displays a numeric value that represents the software level the internal CD Changer contains.

**Component Serial No. 13-16**

The scan tool displays a numeric value that represents the modules serial number.

**Digital Radio Antenna**

The scan tool displays millivolts. This parameter indicates the amount of current being used by the digital radio antenna by measuring the voltage drop across an internal resistor. Typical value is 1200-1800 mV.

**DRR**

The scan tool displays Present/Not Present. The scan tool displays Present when the digital radio receiver (DRR) is connected to the radio.

**End Model Part Number**

Part number used in service to uniquely identify the combination of hardware/software/calibrations programmed into the ECU at the time the part is ordered.

**Julian Date of Build**

The scan tool displays 0-999. This represents the day of year the module was

manufactured.

### **Phone Signal**

The scan tool displays Present/Not Present. The scan tool displays Present when a phone is connected.

### **Power Mode**

The scan tool displays what power mode the module is in.

### **Power Mode Config**

The diagnostic state the radio is in.

### **Radio Signal Strength**

The scan tool displays 0-300. The signal from the antenna is measured in dBuV.

### **Theft Armed**

The scan tool displays Learned VIN/No VIN. The scan tool displays Learned VIN indicating the radio received a valid VIN.

### **Theft Lock Status**

The scan tool displays Active/Inactive. The scan tool displays Inactive, indicating the radio received the correct VIN and the Theft Lock Mode is not enabled.

### **DTC B2462**

#### **Circuit Description**

The global positioning system (GPS) antenna is connected to the navigation radio by a coaxial cable.

#### **DTC Descriptor**

This diagnostic procedure supports the following DTC:

DTC B2462 Global Positioning System (GPS) Error

This vehicle has DTCs which include DTC symptoms. For more information on DTC symptoms, refer to **DTC Symptom Description** .

### **DTC B2462**

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DTC Symptom	DTC Symptom Descriptor
02	Short to Ground
04	Open Circuit

#### Conditions for Running the DTC

The radio must detect one of the following power modes:

- ACC
- ON
- RAP
- RAP UNLK

DTC B2462 does not set if DTC B1328 or B1327 is current.

#### Conditions for Setting the DTC

- The navigation radio test the GPS antenna every 10 seconds.
- The radio determines there is an open in the GPS antenna.
- DTC B2462 does not set if DTC B1328 or B1327 is current.

#### Action Taken When the DTC Sets

- Unable to get GPS location updated, the radio uses the last reported position and the vehicle speed signal to calculate the vehicle position.
- Route guidance may be inaccurate.
- This failure has no effect outside the navigation system.

#### Conditions for Clearing the DTC

- A current DTC clears when the radio does not detect the failure for more than 10 seconds.
- A history DTC clears after 50 ignition cycles with no repeat of the failure.

#### Diagnostic Aids

An intermittent condition may be caused by the following:

- Mis-routed harness
- Rubbed through wire insulation
- Broken wire inside the insulation

#### Test Description

The numbers below refer to the step numbers on the diagnostic table.

**1:** Determines if the malfunction is present.

**3:** Determines if the malfunction is due to an internal fault in the navigation radio or a GPS antenna failure.

### DTC B2462

Step	Action	Value(s)	Yes	No
<b>Schematic Reference: <u>Navigation System Schematics</u></b>				
<b>1</b>	Did you perform the Diagnostic System Check - Vehicle?	-	Go to <b>Step 2</b>	Go to <b><u>Diagnostic System Check - Vehicle</u></b>
<b>2</b>	1. Turn OFF the ignition. 2. Disconnect the global positioning system (GPS) coaxial cable connector. 3. Measure the voltage between the center conductor and the shield of the coaxial cable still attached to the navigation radio.	4.0-5.5 V		
<b>3</b>	Is the voltage within the specified range? Test the GPS cable for an open or short to ground. Refer to <b><u>Circuit Testing</u></b> and <b><u>Wiring Repairs</u></b> . Did you find and correct the condition?	-	Go to <b>Step 5</b>	Go to <b>Step 3</b>
<b>4</b>	Inspect for poor connections at the harness connector of the GPS cable. Refer to <b><u>Testing for Intermittent Conditions and Poor Connections</u></b> and <b><u>Connector Repairs</u></b> . Did you find and correct the condition?	-	Go to <b>Step 7</b>	Go to <b>Step 4</b>
			Go to <b>Step 7</b>	Go to <b>Step 6</b>

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Step	Action	Value(s)	Yes	No
<b>Schematic Reference: Navigation System Schematics</b>				
5	Replace the GPS antenna. Refer to <b>Global Positioning System (GPS) Antenna Replacement</b> .	-		Go to <b>Diagnostic System Check - Vehicle</b> .
1	Did you perform the Diagnostic System Check - Vehicle? Replace the navigation radio. Refer to <b>Control Module</b> .	-	Go to <b>Step 7</b>	
6	References for replacement, setup and programming. 1. Turn OFF the ignition. 2. Disconnect the global positioning system (GPS) coaxial cable connector. 3. Use the scan tool in order to clear the DTC between the center conductor and the shield of the coaxial cable still attached to the navigation radio.	-	Go to <b>Step 7</b>	-
2	2. Operate the vehicle within the Conditions for Running the DTC as specified in the supporting text.	4.0-5.5 V		
7	Does the DTC reset? Is the voltage within the specified	-	Go to <b>Step 2</b>	System OK

### SYMPTOMS - NAVIGATION SYSTEMS

**IMPORTANT:** The following steps must be completed before using the symptom tables.

- Perform the **Diagnostic System Check - Vehicle** in Vehicle DTC Information before using the Symptom Tables in order to verify that all of the following are true:
  - There are no DTCs set.
  - The control modules can communicate via the serial data link.
- Review **Navigation System Description and Operation** in order to familiarize yourself with the system functions.

#### Visual/Physical Inspection

- Inspect for aftermarket devices which could affect the operation of the navigation system components. Refer to **Checking Aftermarket Accessories** in Wiring Systems.
- Inspect the easily accessible or visible system components for obvious damage or conditions which could cause the symptom.

#### Intermittent

Faulty electrical connections or wiring may be the cause of intermittent conditions. Refer to

## **Testing for Intermittent Conditions and Poor Connections** in Wiring Systems.

### **Symptom List**

Refer to a symptom diagnostic procedure from the following list in order to diagnose the symptom:

- **No Global Positioning System (GPS) Reception**
- **Navigation System - Poor or Inoperative TV Reception**
- **Navigation System - Voice Recognition Inoperative**
- For radio/audio related symptoms, refer to **Symptoms - Entertainment** in Entertainment.

### **NO GLOBAL POSITIONING SYSTEM (GPS) RECEPTION**

#### **No Global Positioning System (GPS) Reception**

Step	Action	Yes	No
<b>Schematic Reference: <u>Navigation System Schematics</u></b> <b>DEFINITION:</b> When using the navigation system, the global positioning system (GPS) icon does not appear on the navigation radio.			
1	Did you perform Diagnostic System Check - Vehicle?	Go to <b>Step 2</b>	Go to <b><u>Diagnostic System Check - Vehicle</u></b>
2	1. Move the vehicle to an open area outside of the building. 2. Turn ON the ignition. The Cadillac emblem screen appears on the navigation radio. 3. Press the MAP button on the radio. 4. When the navigation disclaimer screen appears, press the I AGREE button on the display. 5. The display should show the current position of the vehicle. The GPS icon should appear on the upper left corner of the screen, indicating that the navigation system has proper GPS reception.		
	Does the system operate normally?	Go to <b><u>Testing for Intermittent Conditions and Poor Connections</u></b>	Go to <b>Step 3</b>

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Step	Action	Yes	No
<b>Schematic Reference: <u>Navigation System Schematics</u></b> <b>DEFINITION:</b> When using the navigation system, the global positioning system (GPS) icon does not appear on the navigation radio.			
1	1. Remove the GPS antenna from its location in the navigation radio. 2. Place the GPS antenna outside of the vehicle, connected to the navigation module and positioned horizontally. 3. Turn ON the ignition and turn on the navigation system.	Go to <b>Step 2</b>	Go to <b><u>Diagnostic System Check - Vehicle</u></b>
4	1. Move the vehicle to an open area outside of the parking. Does the GPS icon appear on the navigation radio? 2. Turn ON the ignition. The Cadillac emblem screen appears on the navigation radio. Inspect the front window glass for tinting or any other alterations or obstructions. Is the rear window glass OK?	Go to <b>Step 4</b>	Go to <b>Step 6</b>
5	Remove the front window glass tinting or other alterations. Did you complete the repair?	Go to <b>Step 6</b>	Go to <b>Step 5</b>
6	Replace the GPS antenna. Refer to <b><u>Global Positioning System (GPS) Antenna Replacement</u></b> . Did you complete the replacement?	Go to <b>Step 8</b>	-
7	Replace the navigation radio. Refer to <b><u>Control Module References</u></b> . Did you complete the replacement?	Go to <b>Step 8</b>	Go to <b>Step 7</b>
8	Operate the system in order to verify the repair. Did you correct the condition?	System OK	-
			Go to <b>Step 3</b>

### NAVIGATION SYSTEM - POOR OR INOPERATIVE TV RECEPTION

#### Navigation System - Poor or Inoperative TV Reception

Step	Action	Yes	No
<b>Schematic Reference: <u>Navigation System Schematics</u></b> <b>DEFINITION:</b> When using the navigation radio TV function, the TV reception (TV picture and/or TV sound) is poor or inoperative.			
1	Did you perform the Diagnostic System Check - Vehicle?	Go to <b>Step 2</b>	Go to <b><u>Diagnostic System Check - Vehicle</u></b>
	1. Turn ON the ignition. The Cadillac emblem screen appears on the		

2	<p>navigation radio.</p> <ol style="list-style-type: none"> <li>2. Leave the vehicle in PARK.</li> <li>3. Press the audio MENU button on the radio. The audio menu appears on the display.</li> <li>4. Press the TV button on the radio audio menu screen. This button is present with UE7 only.</li> <li>5. Select a TV station. The TV should be clear on the radio display.</li> </ol>		
3	<p>Does the system operate normally?</p> <ol style="list-style-type: none"> <li>1. Disconnect the coaxial cable leading to each TV antenna (within the rear window glass).</li> <li>2. Test each TV antenna and coaxial cable for an open, a short to ground or a short to voltage. Make sure the ignition and the rear defog/defrost is turned ON with the engine OFF when testing for a short to voltage. Refer to <b><u>Circuit Testing</u></b> and <b><u>Wiring Repairs</u></b> .</li> </ol>	<p>Go to <b><u>Testing for Intermittent Conditions and Poor Connections</u></b></p>	<p>Go to <b>Step 3</b></p>
4	<p>Did you find and correct the condition?</p> <ol style="list-style-type: none"> <li>1. Disconnect the TV antenna module connector.</li> <li>2. Turn ON the ignition with the engine off.</li> <li>3. Test each of the following circuits for a short to voltage: <ul style="list-style-type: none"> <li>• The antenna select Baud 1 signal (+) circuit</li> <li>• The antenna select Baud 2 signal (+) circuit</li> <li>• The antenna select supply voltage circuit</li> <li>• The antenna select signal (-) circuit</li> </ul> </li> </ol>	<p>Go to <b>Step 11</b></p>	<p>Go to <b>Step 4</b></p>



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Step	Refer to <b>Circuit Testing</b> and <b>Wiring Repairs</b>	Yes	No
	<b>Schematic Reference:</b> <b>Navigation System Schematics</b> DEFINITION: When using the following circuit for a function, the TV reception (TV picture) and/or TV sound is poor or inoperative.	Go to <b>Step 6</b>	Go to <b>Step 5</b>
1	Did you perform the Diagnostic System Check - Vehicle? <ul style="list-style-type: none"> <li>The antenna select Baud 1 signal (+) circuit</li> <li>The antenna select Baud 2 signal (+) circuit</li> </ul>	Go to <b>Step 2</b>	Go to <b>Diagnostic System Check - Vehicle</b>
5	1. Turn ON the ignition. The Cadillac emblem screen appears on the navigation radio. <ul style="list-style-type: none"> <li>The antenna select supply voltage circuit</li> </ul> 2. The antenna select signal (+) circuit 3. Press the audio MENU button on the radio. The audio menu appears on the display.		
2	4. Press the TV button on the radio. Did you find and correct the condition? Test the TV signal circuit between the TV antenna module and the navigation radio for an open, a short to ground or a short to voltage. Refer to <b>Circuit Testing</b> and <b>Wiring Repairs</b> .	Go to <b>Step 11</b> Go to <b>Testing for Intermittent Conditions and Poor Connections</b>	Go to <b>Step 7</b>
6	5. Select a TV station. The TV should be clear on the radio display. Does the system operate normally? Did you find and correct the condition?	Go to <b>Step 11</b>	Go to <b>Step 7</b>
7	1. Disconnect the coaxial cable leading to each TV antenna (within the rear window glass). Refer to <b>Testing for Intermittent Conditions and Poor Connections and Connector Repairs</b> . 2. Open, a short to ground or a short to voltage. Make condition?	Go to <b>Step 11</b>	Go to <b>Step 8</b>
3	Replace the TV antenna module. Ignition and the rear defog/defrost is turned ON with the engine OFF when testing for a short to voltage. Refer to <b>Circuit Testing</b> and <b>Wiring Repairs</b> .	Go to <b>Step 11</b>	Go to <b>Step 9</b>
8	Did you find and correct the condition? Inspect for poor connections at the harness connector of the navigation radio. Refer to <b>Testing for Intermittent Conditions and Poor Connections</b> and <b>Connector Repairs</b> .	Go to <b>Step 11</b>	Go to <b>Step 10</b>
9	Did you find and correct the condition?	Go to <b>Step 11</b>	Go to <b>Step 10</b>
10	Replace the navigation radio. Refer to <b>Control Module References</b> .		

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11	<p>Did you complete the replacement?</p> <p>1. Disconnect the TV antenna module connector. Make sure all connections are tight.</p> <p>2. Turn ON the ignition with the engine off.</p> <p>3. Test each of the following circuits for a short to voltage:</p> <p>4. Select the TV option on the navigation radio.</p> <p>• The antenna select Baud 1 signal (+) circuit</p>	Go to <b>Step 11</b>	-
4	<p>Is the picture strong?</p> <p>• The antenna select Baud 2 signal</p>	-	Go to <b>Step 3</b>

### NAVIGATION SYSTEM - VOICE RECOGNITION INOPERATIVE

#### Navigation System - Voice Recognition Inoperative

Step	Action	Yes	No
<b>Schematic Reference:</b> <u>Navigation System Schematics</u>			
<b>DEFINITION:</b> The navigation voice recognition is inoperative.			
1	<p>Did you perform Diagnostic System Check - Vehicle?</p> <p>1. Turn ON the ignition. The Cadillac emblem screen appears on the navigation radio.</p> <p>2. Press the radio MENU button on the radio.</p> <p>3. When the navigation disclaimer screen appears, press the I AGREE button on the display.</p>	Go to <b>Step 2</b>	Go to <b><u>Diagnostic System Check - Vehicle</u></b> in Vehicle DTC Information
2	<p>4. Press the MAP button on the radio. The display should show the current position of the vehicle. The navigation map should be clear and have clear color.</p> <p>5. Press the voice switch on the steering wheel. Speak a valid voice command. The system should repeat your command and then perform the function.</p>	Go to <b><u>Testing for Intermittent Conditions and Poor Connections</u></b>	

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Step	Does the system operate normally?	Action	Yes	No
<b>Schematic Reference:</b> <u>Navigation System Schematics</u>	Test the following circuits for an open or short to ground or a short to voltage:			Go to <b>Step 3</b>
3	Did you perform Diagnostic System Check - Vehicle?	-		Go to <b>Diagnostic System Check</b>
4	Refer to <b>Circuit Testing</b> and <b>Wiring Repairs</b> in Wiring Systems. Did you find and correct the condition? Inspect for poor connections at the harness connector of the navigation radio. Refer to <b>Testing for Intermittent Conditions and Poor Connections</b> and <b>Connector Repairs</b> in Wiring Systems.		Go to <b>Step 6</b>	Go to <b>Step 4</b>
5	Did you find and correct the condition? Replace the navigation radio. Refer to <b>Control Module References</b> in Computer/Integrating Systems for replacement, setup and programming. Did you complete the replacement?		Go to <b>Step 6</b>	Go to <b>Step 5</b>
6	Operate the system to verify the repair. Does the system operate properly?		Go to <b>Step 6</b>	-
			System OK	Go to <b>Step 3</b>

### NAVIGATION SYSTEM - VOICE GUIDANCE INOPERATIVE OR DEGRADED QUALITY

Schematic Reference

#### Radio/Audio System Schematics

Connector End View Reference

#### Entertainment Connector End Views

Diagnostic System Check - Vehicle

Always perform the Diagnostic System Check - Vehicle before proceeding with these diagnostic procedures. Refer to Diagnostic System Check - Vehicle .

Voice Guidance Inoperative or Degraded

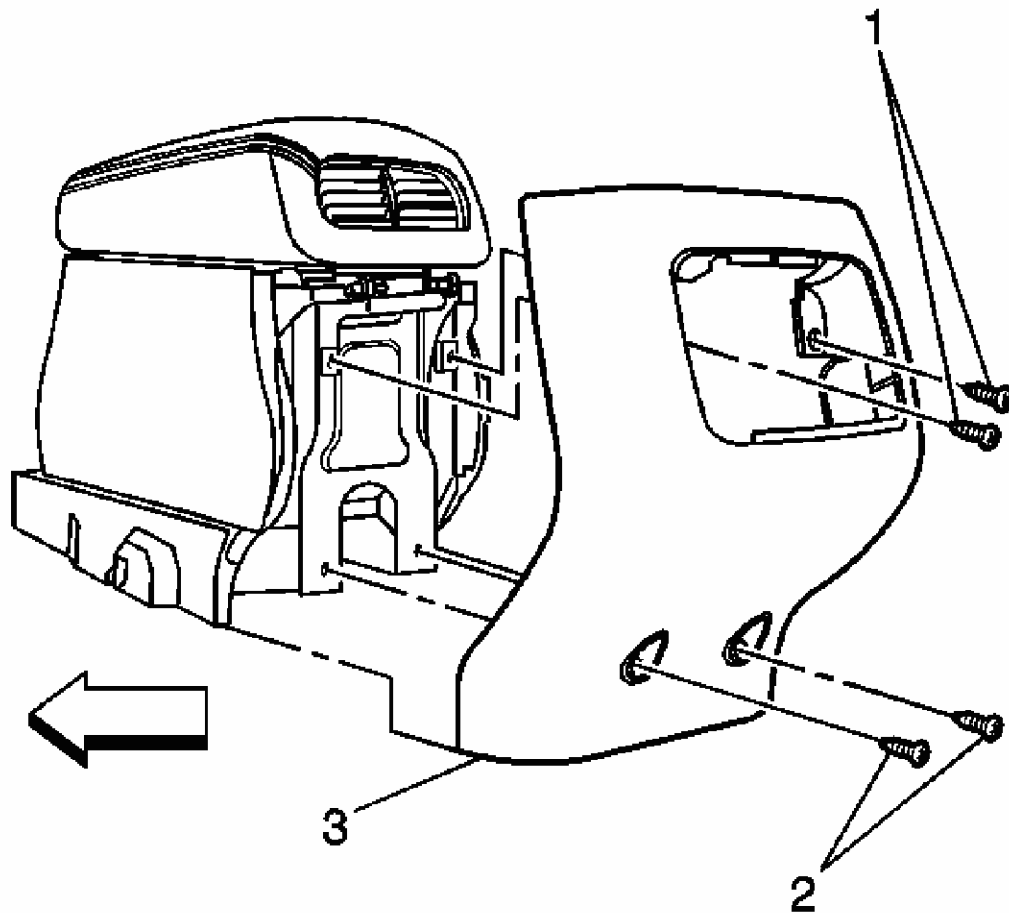
**IMPORTANT:** The following information lists the most probable cause of the concern to the least probable cause. If the list leads to the replacement of a component, always inspect for a poor connection before proceeding with replacement. Refer to Testing for Intermittent Conditions and Poor Connections and Connector Repairs .

1. Audio Prompt Out Circuits open or shorted-Test the Audio Prompt Out circuits for an open, short to ground or short to voltage. Refer to Circuit Testing and Wiring Repairs .
2. Defective Radio-Replace the radio. Refer to Control Module References for replacement, setup and programming.
3. Defective Amplifier-Replace the amplifier. Refer to Control Module References for replacement, setup and programming.

## **REPAIR INSTRUCTIONS**

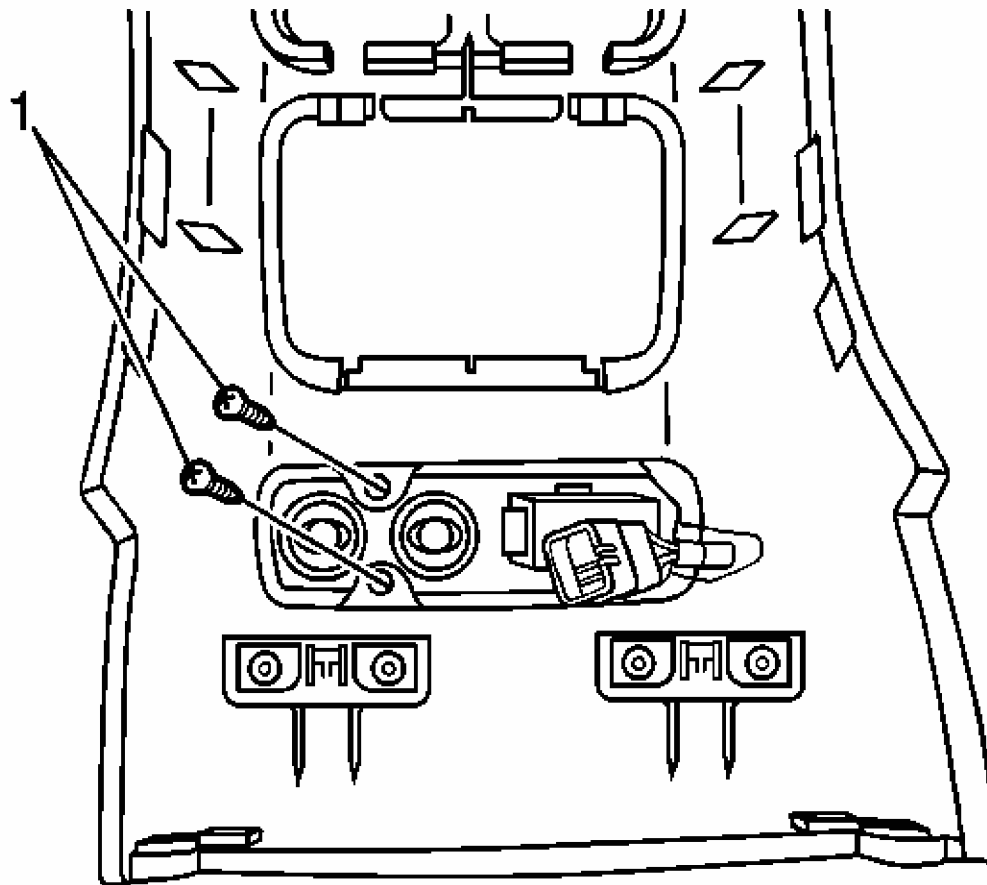
### **AUDIO/VIDEO WIRING HARNESS REPLACEMENT**

#### **Removal Procedure**



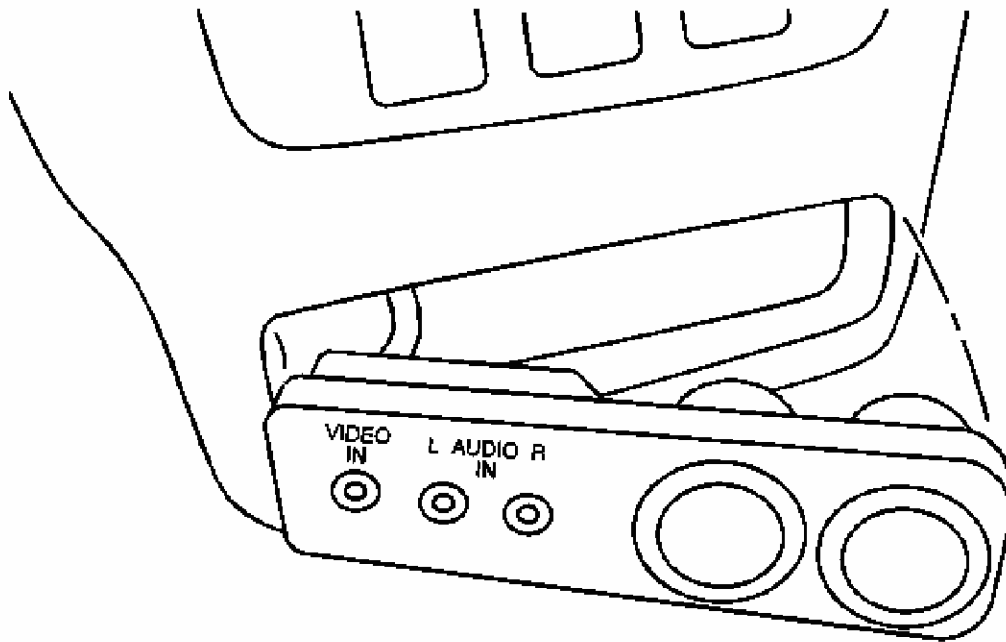
**Fig. 6: View Of Floor Console Rear Cover & Screws**  
**Courtesy of GENERAL MOTORS CORP.**

1. Remove the floor console rear cover (3) screws (1), located under the rear auxiliary HVAC control.
2. Remove the lower floor console rear cover (3) screws (2).
3. Disconnect the electrical connectors from the audio video wiring harness and the auxiliary outlets.



**Fig. 7: View Of Accessory Outlet Plate Screws**  
**Courtesy of GENERAL MOTORS CORP.**

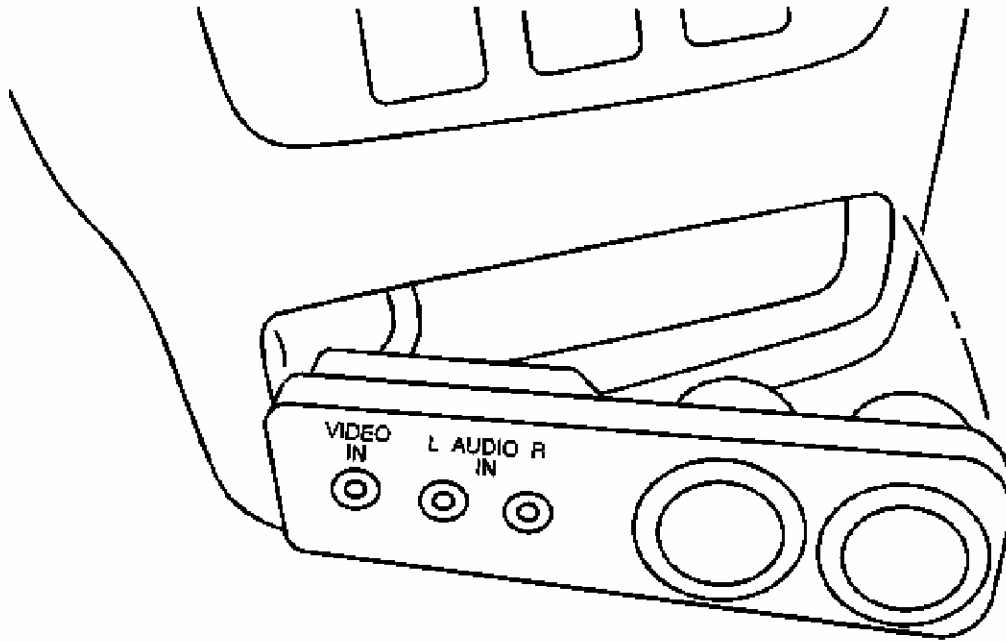
4. Remove the floor console rear cover.
5. Remove the 2 screws (1) that retain the accessory outlet plate to the floor console.



**Fig. 8: View Of Accessory Outlet Plate**  
**Courtesy of GENERAL MOTORS CORP.**

6. Remove the accessory outlet plate from the floor console rear cover.

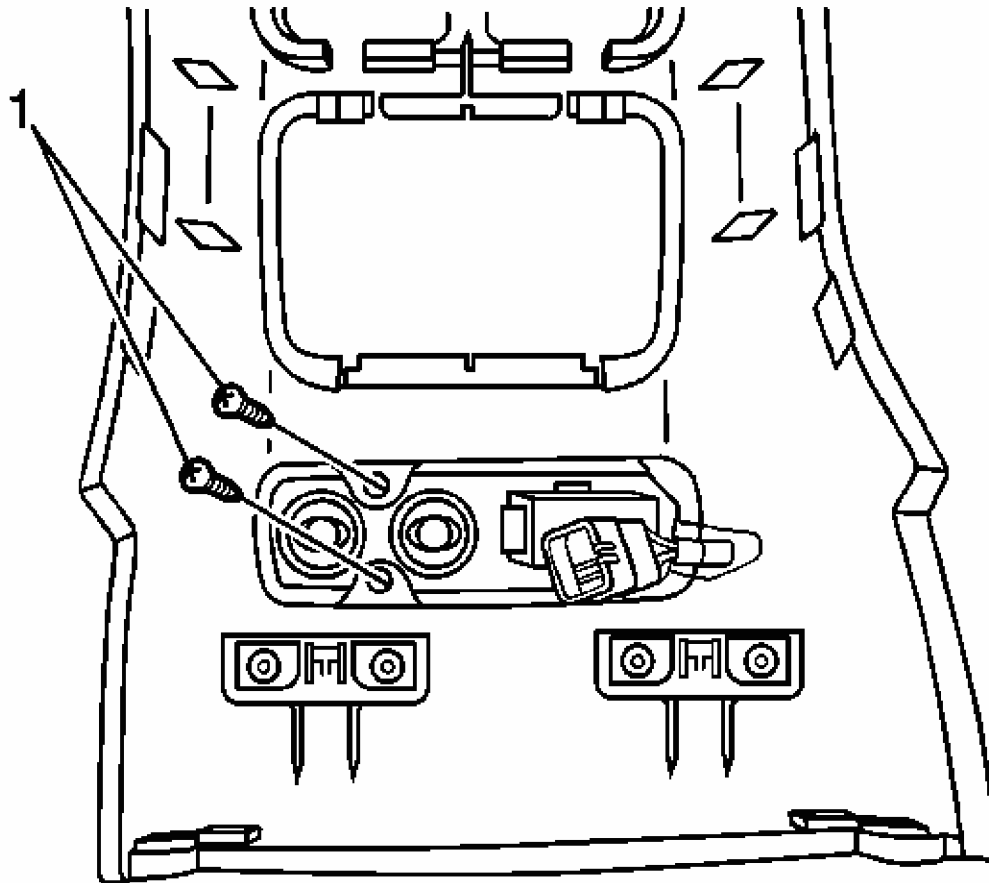
#### **Installation Procedure**



**Fig. 9: View Of Accessory Outlet Plate**  
**Courtesy of GENERAL MOTORS CORP.**

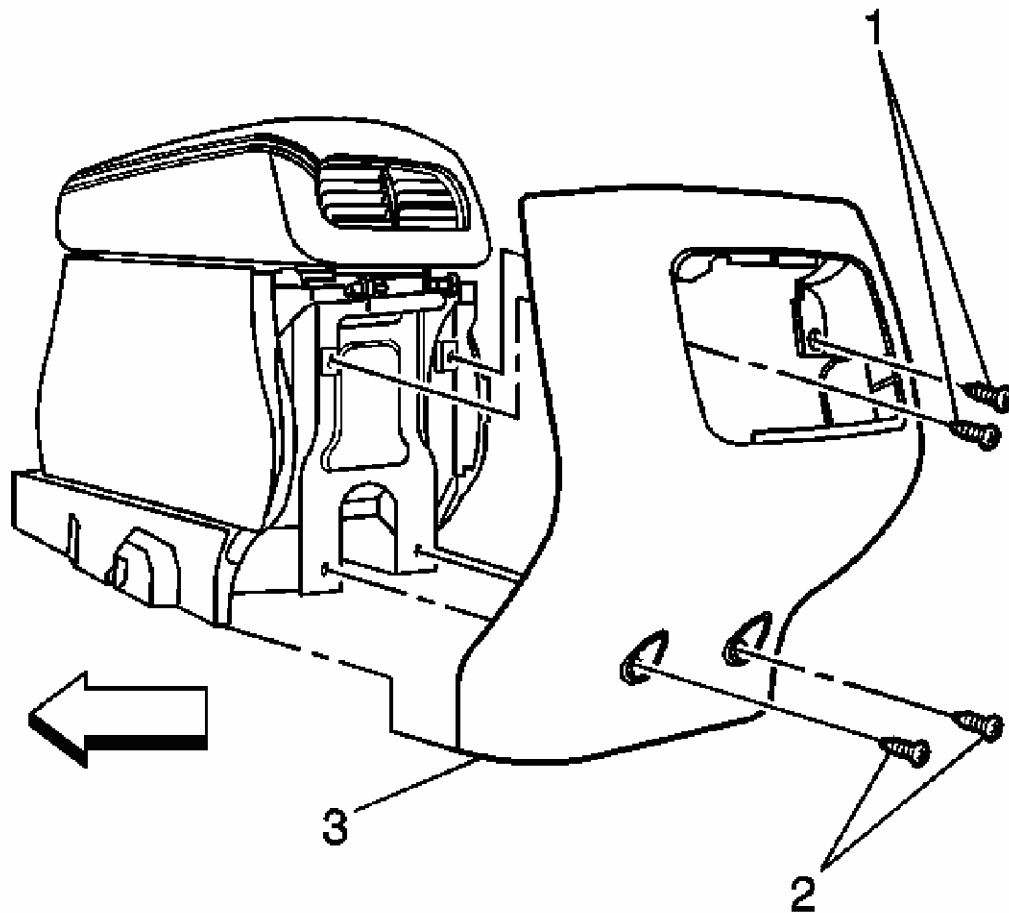
1. Install the accessory outlet plate to the floor console rear cover.





**Fig. 10: View Of Accessory Outlet Plate Screws**  
**Courtesy of GENERAL MOTORS CORP.**

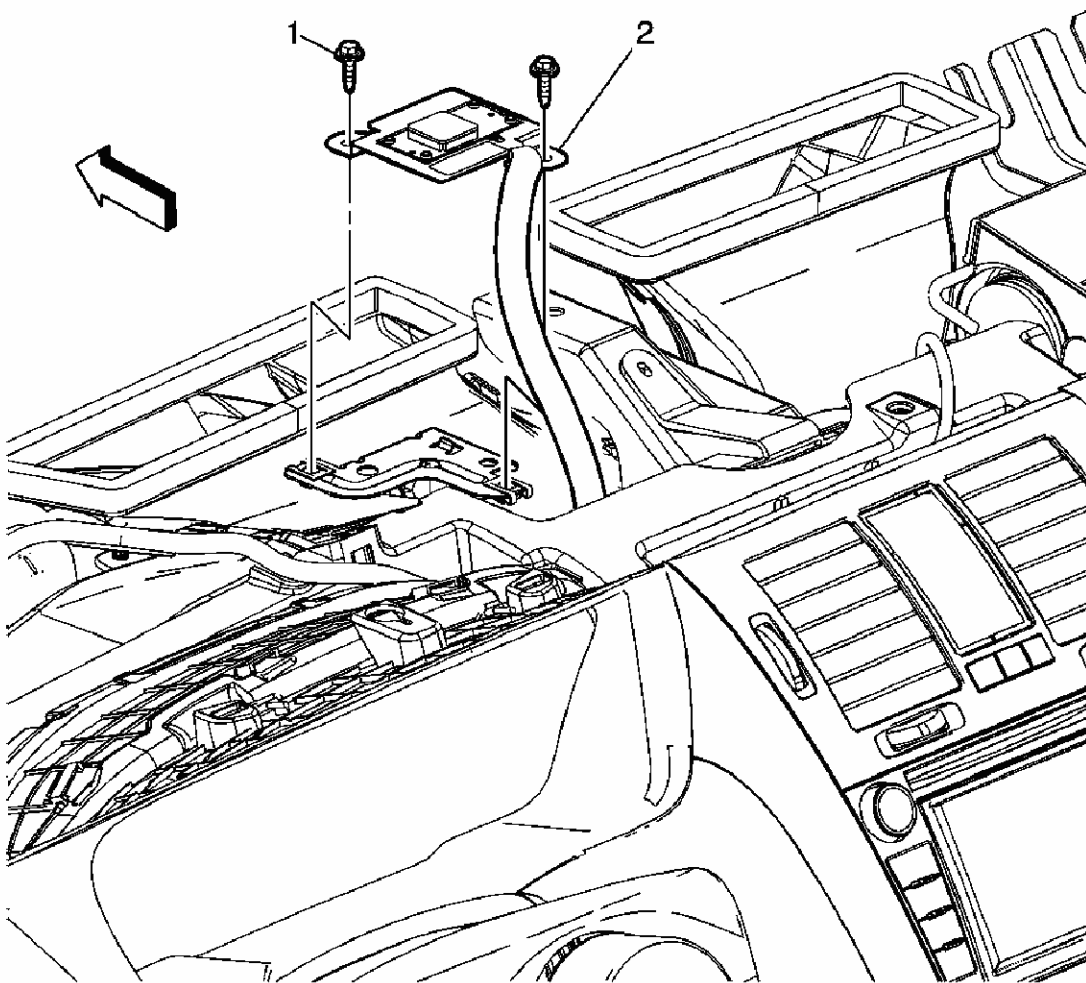
2. Install the screws (1) to the accessory outlet plate.
3. Partially install the floor console rear cover.
4. Connect the electrical connectors to the auxiliary outlets and audio video wiring harness.



**Fig. 11: View Of Floor Console Rear Cover & Screws**  
**Courtesy of GENERAL MOTORS CORP.**

5. Install the floor console rear cover (3).
6. Install the floor console rear cover (3) screws (1, 2).

#### **GLOBAL POSITIONING SYSTEM (GPS) ANTENNA REPLACEMENT**



**Fig. 12: Replacing Global Positioning System (GPS) Antenna**  
 Courtesy of GENERAL MOTORS CORP.

### Global Positioning System (GPS) Antenna Replacement

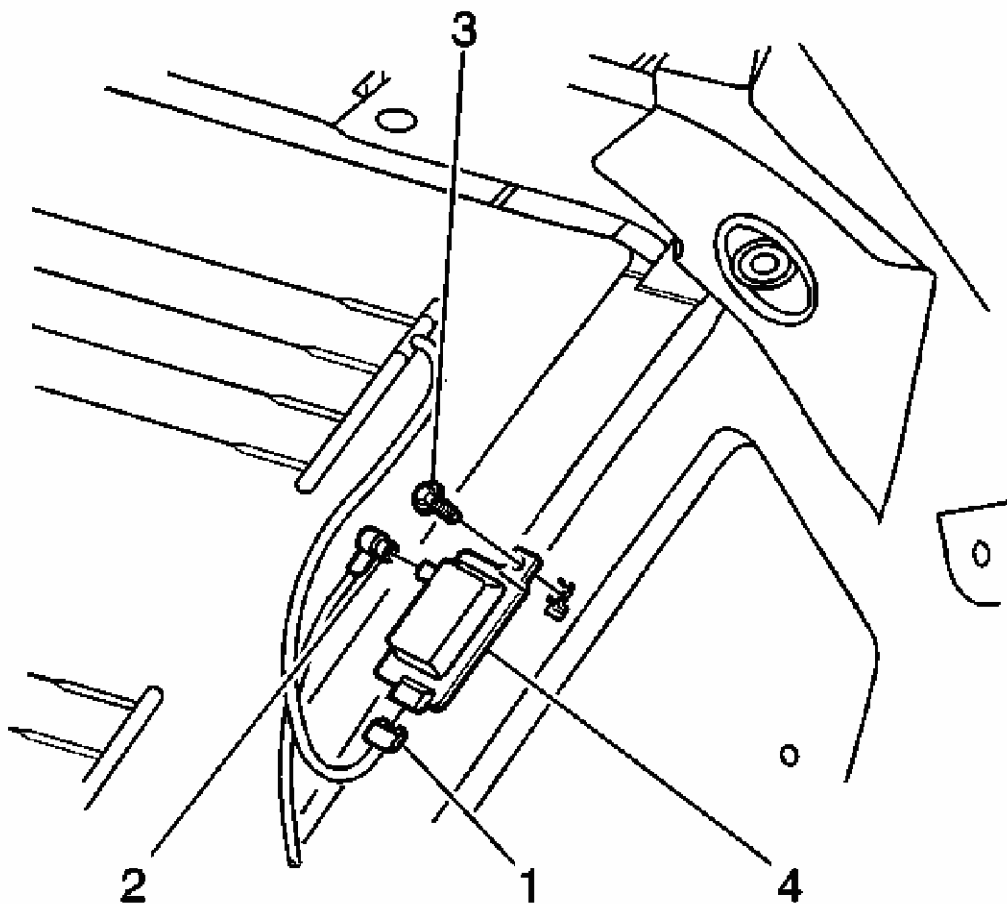
Callout	Component Name
<b>Fastener Tightening Specifications:</b> Refer to <u>Fastener Tightening Specifications</u> .	
<b>Preliminary Procedure</b>	
1. Remove the instrument panel upper trim pad. Refer to <u>Instrument Panel Upper Trim Pad Replacement</u> .	
2. Remove the radio. Refer to <u>Radio Replacement</u> .	
1	Global Positioning System (GPS) Bracket Bolt (Qty: 2) <b>Tighten:</b> 2.5 N.m (22 lbs in).
2	Instrument Panel (I/P) GPS Antenna Assembly <b>Tip:</b> Disconnect the I/P GPS antenna assembly from the radio.

## TELEVISION ANTENNA AMPLIFIER REPLACEMENT

### Removal Procedure

**IMPORTANT:** There is a TV antenna amplifier on both the left and the right sides of the vehicle.

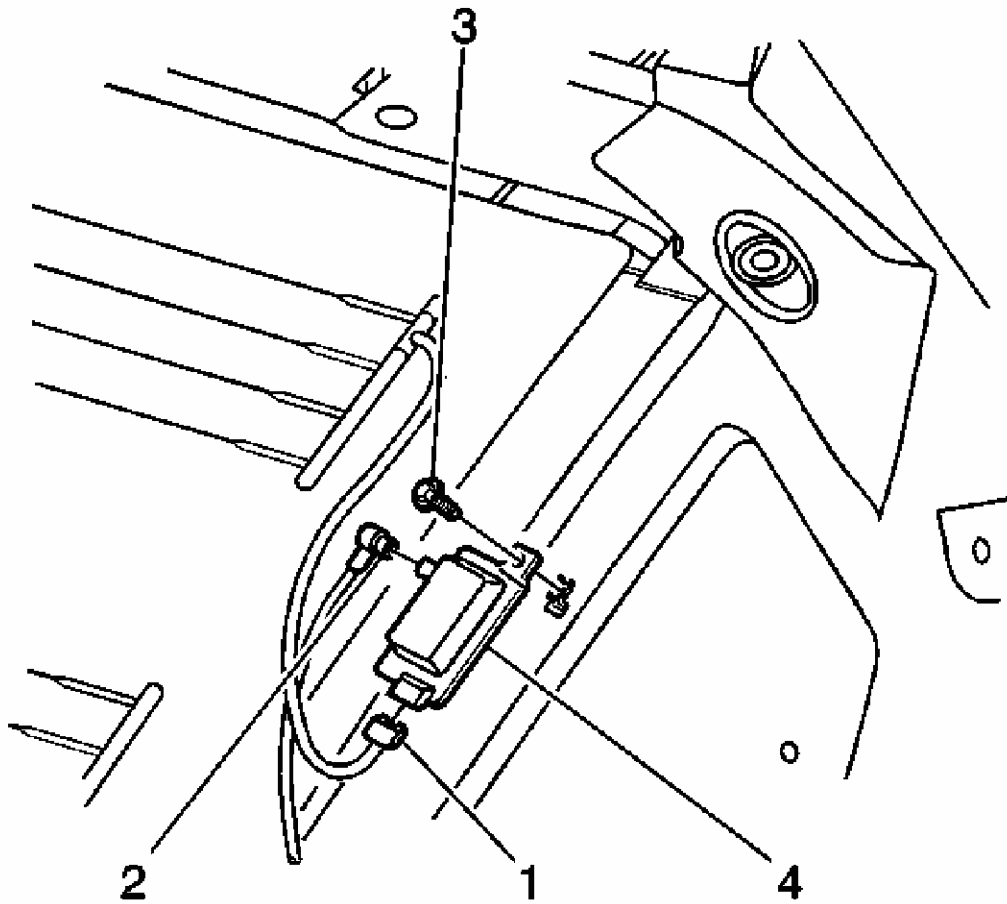
1. Remove the left and/or right quarter trim panels. Refer to Rear Quarter Upper Trim Panel Replacement .



**Fig. 13: View Of TV Antenna Amplifier & Components**  
**Courtesy of GENERAL MOTORS CORP.**

2. Disconnect the coaxial cable (4) and the electrical connection (3).
3. Remove the bolts (1) from the TV antenna amplifier (2).
4. Remove the TV antenna amplifier (2).

## Installation Procedure



**Fig. 14: View Of TV Antenna Amplifier & Components**  
**Courtesy of GENERAL MOTORS CORP.**

1. Install the TV antenna amplifier module (2).

Ensure that the alignment tab is located properly before tightening the bolts (1).

**NOTE:** Refer to Fastener Notice .

2. Install the bolts (1).

**Tighten:** Tighten the bolts (1) to 9 N.m (80 lb in).

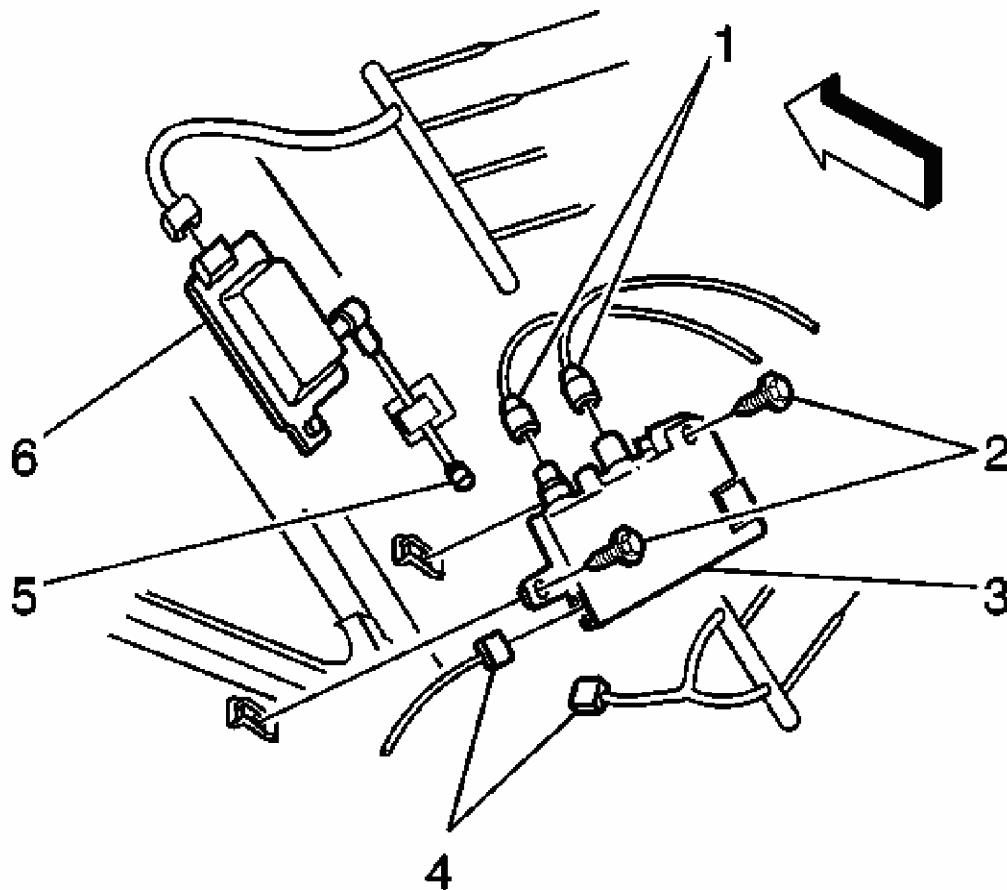
3. Connect the coaxial cable (4) and the electrical connection (3).

4. Install the left and or right quarter trim panels. Refer to **Rear Quarter Upper Trim Panel Replacement** .

## TELEVISION ANTENNA MODULE REPLACEMENT

### Removal Procedure

1. Remove the passenger side quarter trim panel. Refer to **Rear Quarter Upper Trim Panel Replacement** .

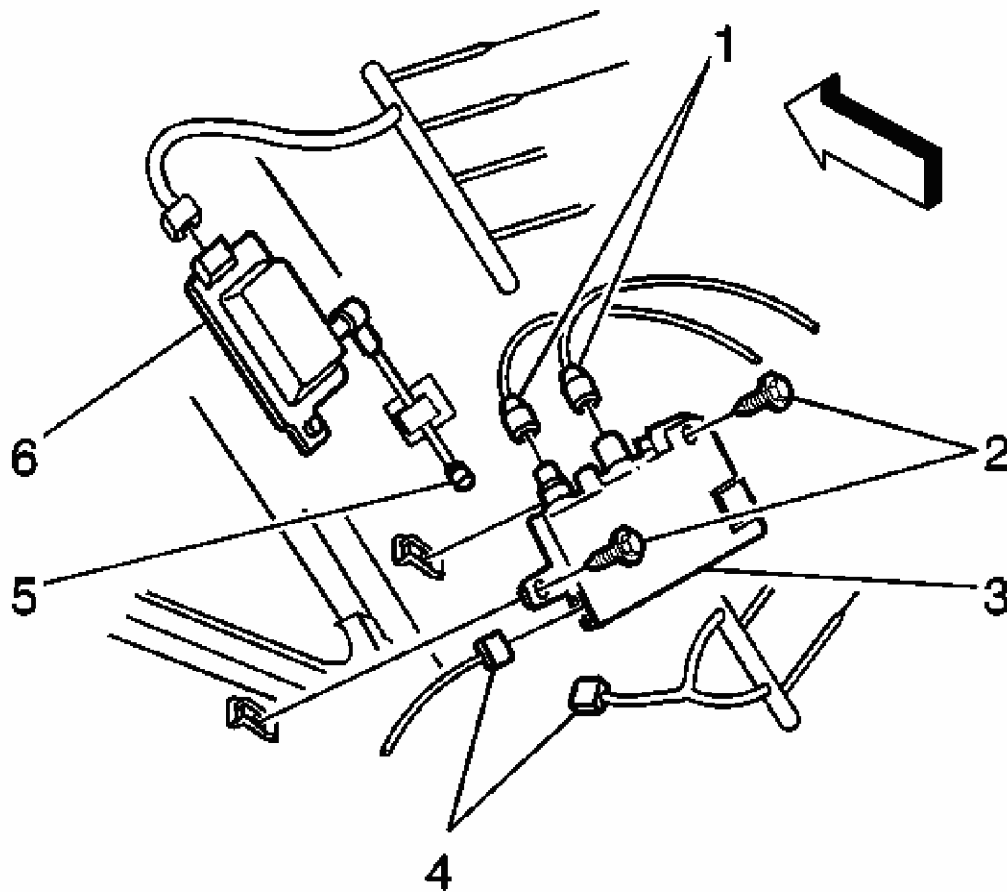


**Fig. 15: View Of TV Antenna Module & Components**  
**Courtesy of GENERAL MOTORS CORP.**

2. Disconnect the electrical wiring and coaxial cables (1, 4, 5) from the TV antenna module (3).
3. Remove the TV antenna module fasteners (2).

4. Remove the TV antenna module (3) from the vehicle.

**Installation Procedure**



**Fig. 16: View Of TV Antenna Module & Components**  
**Courtesy of GENERAL MOTORS CORP.**

**NOTE:** Refer to Fastener Notice .

1. Install the TV antenna module (3) and fasteners (2).

**Tighten:** Tighten the TV antenna module (3) fasteners (2) to 9 N.m (80 lb in).

2. Connect the electrical wiring and coaxial cables (1, 4, 5) to the TV antenna module (3).
3. Install the passenger side quarter trim panel. Refer to Rear Quarter Upper Trim Panel Replacement .

## DESCRIPTION AND OPERATION

### NAVIGATION SYSTEM DESCRIPTION AND OPERATION

#### Operator Controls

Controls	US	Export
Adjust	Displays the audio adjust screen	Displays the audio/TV adjust screen
Band	Changes between AM/FM1/FM2/WX	
Config	Press to change system settings	
Eject	Press to eject the map DVD	
Map	Press to enter map mode	
Repeat	Press to repeat the last voice guidance	
Source	Changes between the different	
Tilt	Press to tilt the position of the display screen	
Tune/Seek	Allows the system to tune to the next preprogrammed station or to seek stations in the area	

#### Navigation System Components

The navigation system contains the following components:

- The navigation radio
- The global positioning system (GPS) antenna

The export navigation system (w/YQ6, YQ7) contains the following additional components:

- The vehicle information communication system (VICS) microprocessor card (w/YQ7)
- The VICS optical/microwave beacon antenna (w/YQ7)
- The 4 TV antennae integrated into the rear window glass (w/YQ6, YQ7)
- The VICS FM antenna integrated into the rear glass (w/YQ7)
- The TV antenna module to control antenna selection (w/YQ6, YQ7)
- The 2 TV antenna amplifiers (w/YQ6, YQ7)
- The auxiliary RCA video jacks

#### Navigation Radio

This component acts as the operator interface for the navigation system, provides the data input from the operator to the navigation system and provides navigation information to the operator via the display screen. The navigation radio is located in the center of the instrument panel. The navigation radio provides the following:



- A display screen-All navigation, audio and TV functions are displayed on this screen
- Soft key buttons on the display to allow selection from menus and to operate the navigation system, the audio system and the export TV system
- The navigation system map with routing information displayed on the navigation radio screen
- The navigation system map with routing information displayed on the navigation radio screen
- Provides verbal guidance to the operator

**Global Positioning System (GPS) Antenna**

The global positioning system (GPS) antenna is attached to the bottom of the rear shelf and can be accessed through the rear compartment. The GPS antenna is powered through the same coaxial cable used to send the signals to the NAV.

**TV and VICS Antenna - Export, w/YQ6, YQ7**

These several antennae are conductive traces placed on the inside of the rear window glass.

**TV Antenna Module - Export, w/YQ6, YQ7**

The TV antenna module is located behind the trim on the right rear side of the passenger compartment. The TV antenna module is used by the navigation radio to automatically select the antenna combination that provides the strongest TV signal to the navigation radio. The TV antenna module also provides the vehicle information communication system (VICS) FM signal to the VICS card (export, w/UE9).

**TV Antenna Amplifiers - Export, w/YQ6, YQ7**

The TV antenna amplifiers are mounted behind the trim on each side of the rear window. The TV antenna amplifiers are powered by the TV antenna module through the same coaxial cable used to carry their signals to the TV antenna module. They are attached to 2 of the 4 TV antenna trace patterns in the rear window glass.

**Auxiliary RCA Video Jacks**

The auxiliary RCA video jacks are used to attach a remote video device. These connections may be used to provide audio and video input from a video player or camera to the navigation radio.

**VICS Module - Export, w/YQ7**

The vehicle information communication system (VICS) card, an export only dealer-installed option, is installed inside the navigation radio. The VICS card uses signals from the optical/microwave beacon antenna and the rear glass VICS antenna via the TV antenna

module to convey routing information to the NAV. The NAV either revises planned routing or relays the VICS information to the operator through the screen of the navigation radio and the voice guidance system.

#### **VICS Optical/Microwave Beacon Antenna - Export, w/YQ7**

The vehicle information communication system (VICS) optical/microwave beacon antenna (export, w/UE9) is a dealer-installed option. The antenna, which is mounted on the right side of the instrument panel, picks up signals through the front window glass. A coaxial cable carries the power to and signals from this antenna to the navigation radio.

#### **Voice Recognition**

The Navigation System's voice recognition allows for hands-free operation of navigation and audio system features. The voice recognition can be used when the ignition is in accessory or ON or when retained accessory power (RAP) is active. This feature only works if the map DVD is inserted and the AGREE button has been pressed. The memory seats can also be able to be set and selected using the voice recognition feature. For a complete list of available commands, refer to the Owners Manual Navigation Supplement and/or Personalization in the Owners manual.

#### **Bluetooth**

The navigation radio is equipped with Bluetooth. Bluetooth is a wireless communication system that allows the use of a cellular phone in a hands-free mode. A phone directory may also be set up for use in the vehicle. Up to 12 phones may be registered with this Bluetooth system, but only one phone may be connected at a time. In order to use a cellular phone with this Bluetooth system, the phone must be Bluetooth compatible. Please see the phone information to find out which versions of Bluetooth work with your phone.

To set up your phone, do the following:

1. Press the AUX hard key to enter the Bluetooth screen.
2. Touch the Bluetooth screen button.
3. Touch the Search screen button. The system will search for all Bluetooth compatible phones in a designated area.
4. The Device List screen will appear. Scroll through the choices using the arrow buttons.
5. Choose your device by touching the icon next to the device name.
6. Touch the Connect screen button. Your phone and the Bluetooth system will begin a pairing procedure.
7. Follow the instructions on screen. They will differ depending on your phone. Refer to your phone instructions for further information.

Refer to the owners manual for more information.

<b>2006 Buick Lucerne CXS</b>
2006 ACCESSORIES & EQUIPMENT Navigation Systems - Lucerne

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